

2.4 FACTORS THAT INFLUENCE CLIMATE



6 FACTORS

L- Latitude

O- Ocean Currents

W- Wind and Air Masses

E- Elevation

R- Relief

N- Nearness to Water

1. LATITUDE

- ◉ Latitude is the distance a place is located from the equator
- ◉ The closer you are to the equator the hotter it is (0°)



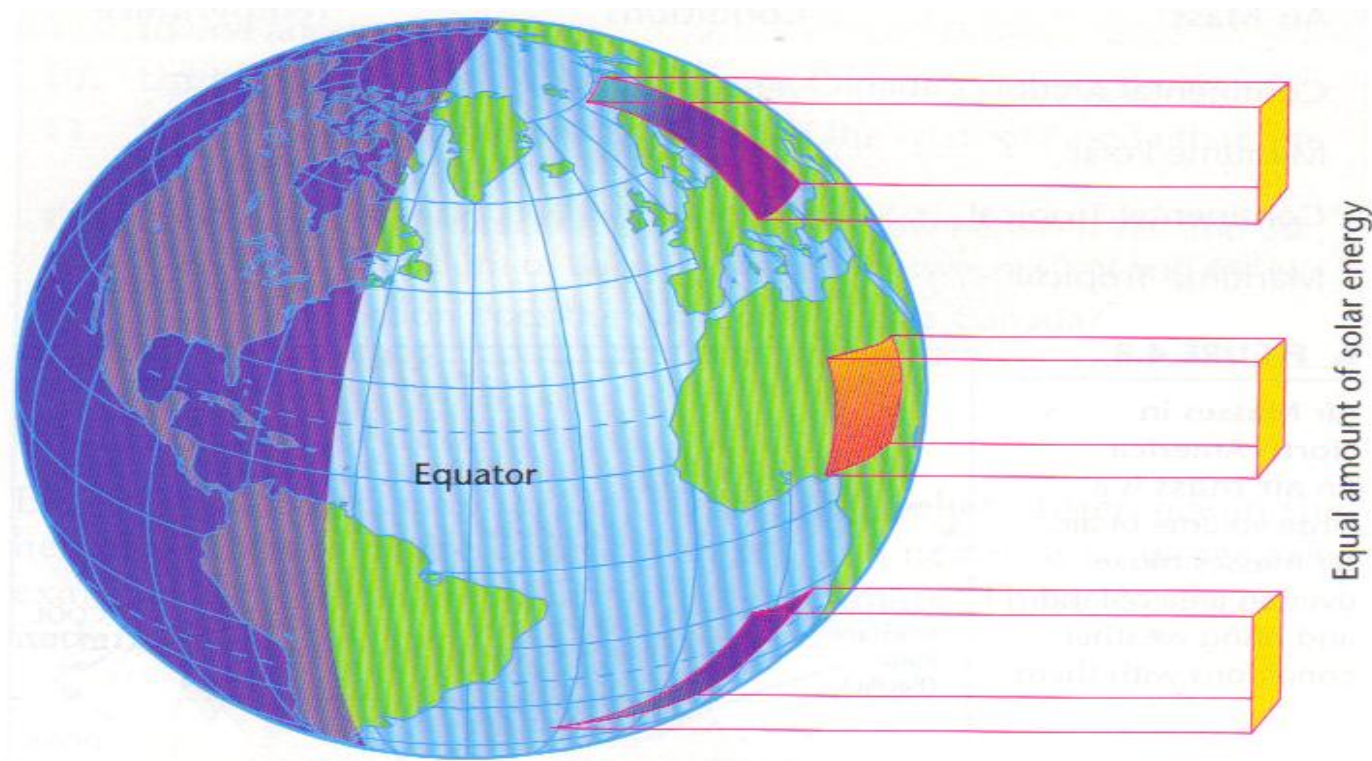
1. LATITUDE

- ◉ As you move away from the equator toward the north and south poles , the temperatures get cooler

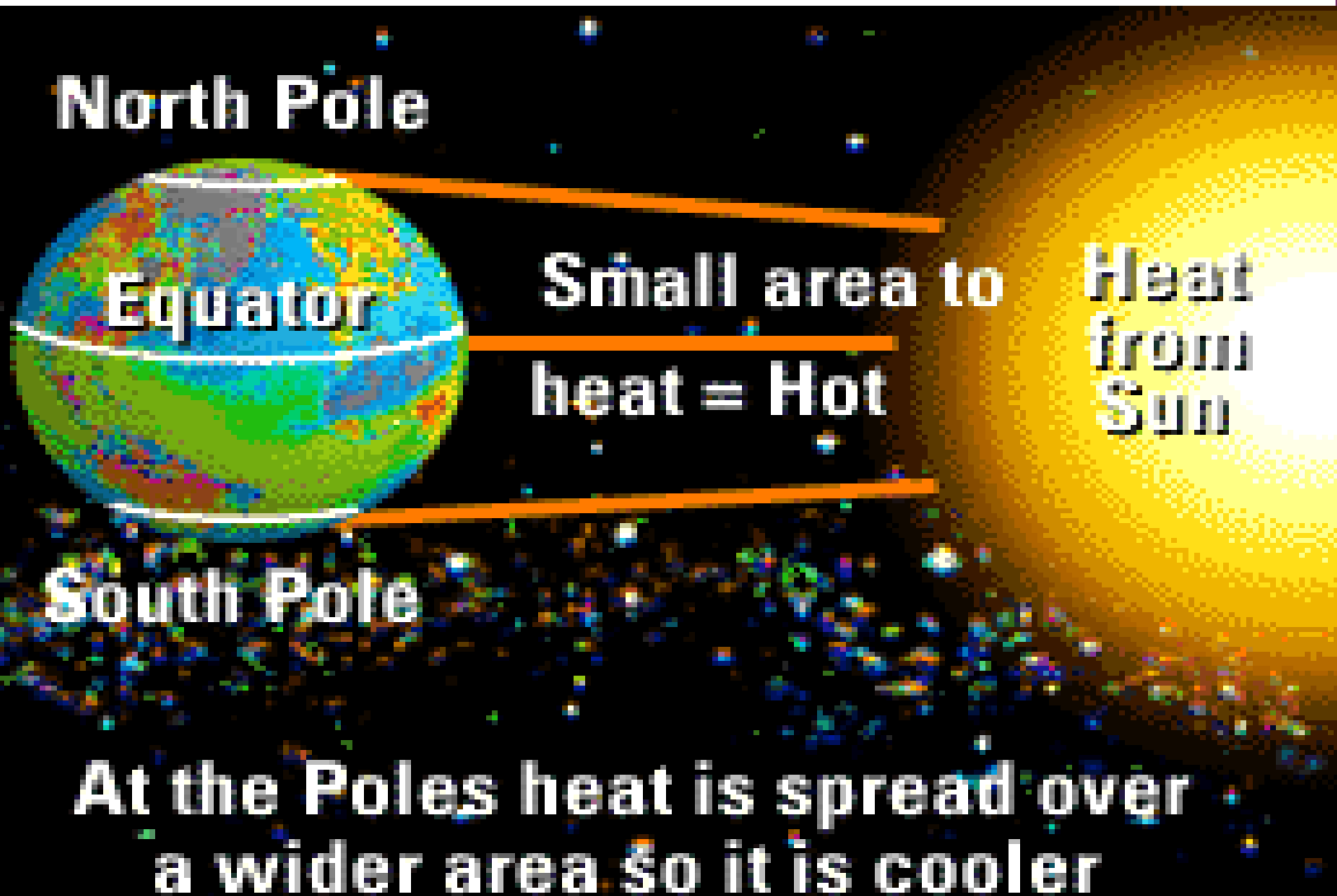


1. LATITUDE

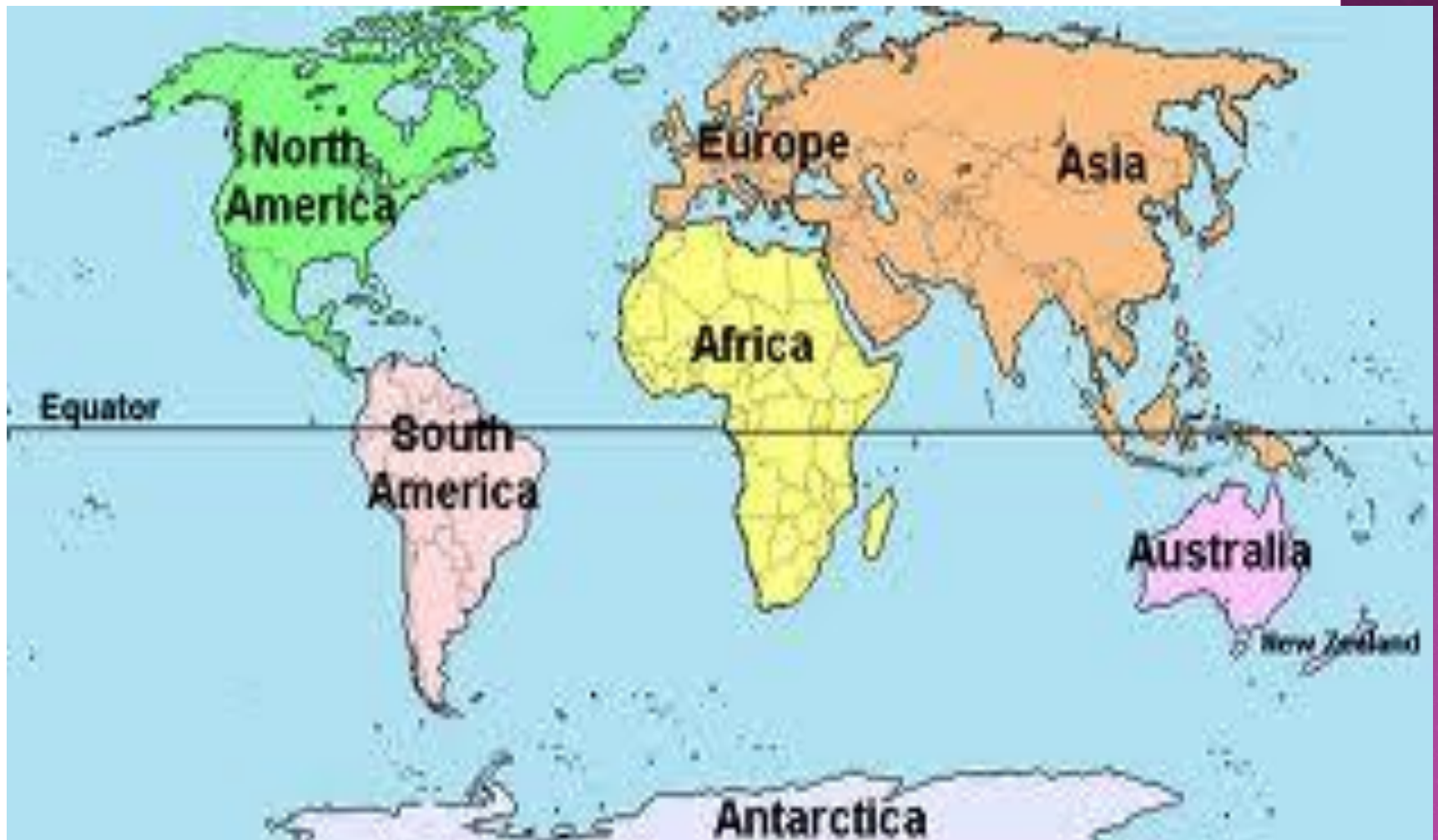
- ⦿ This is because the earth's rounded surface causes the sun's energy to be spread out over large areas.



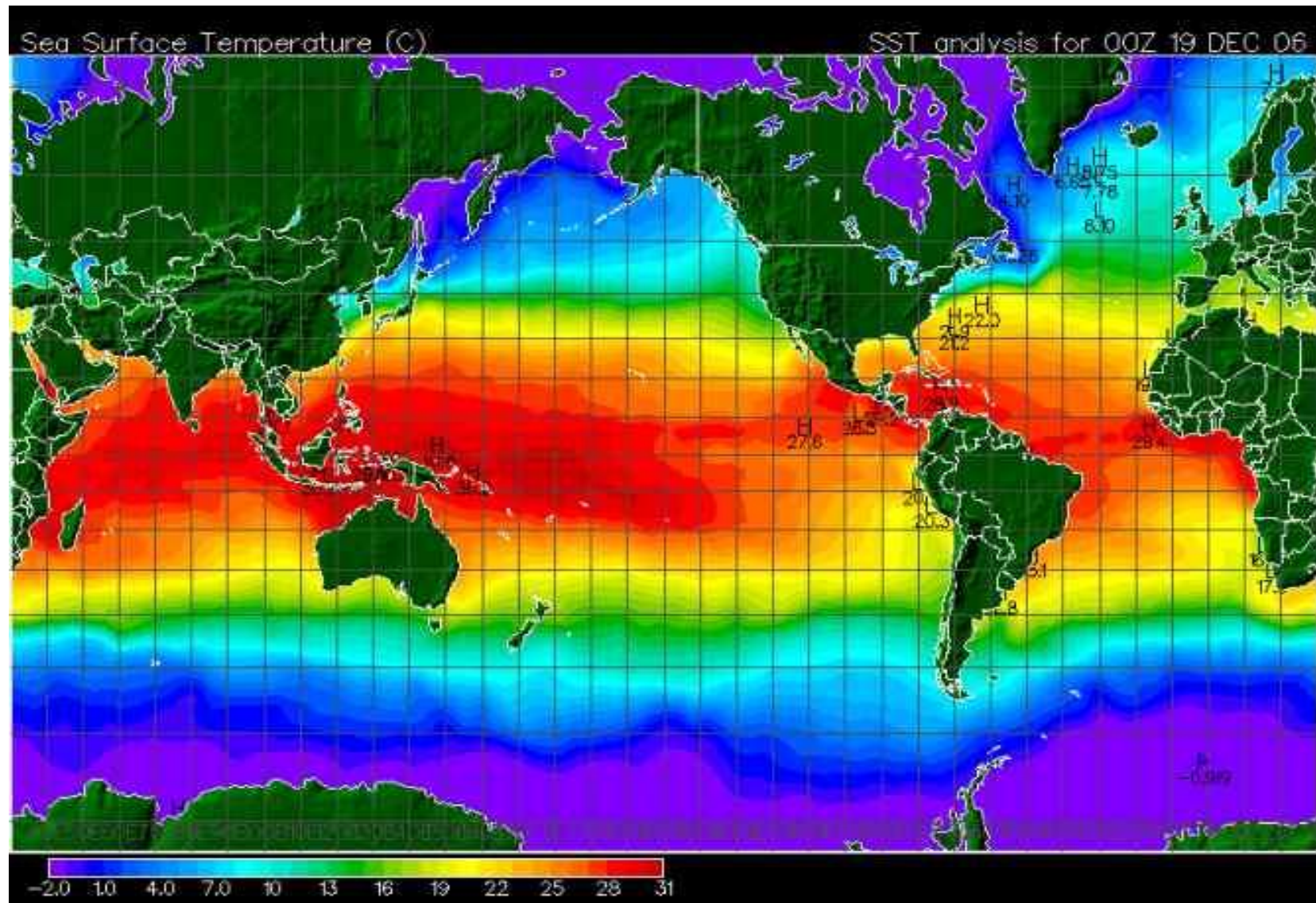
1. LATITUDE



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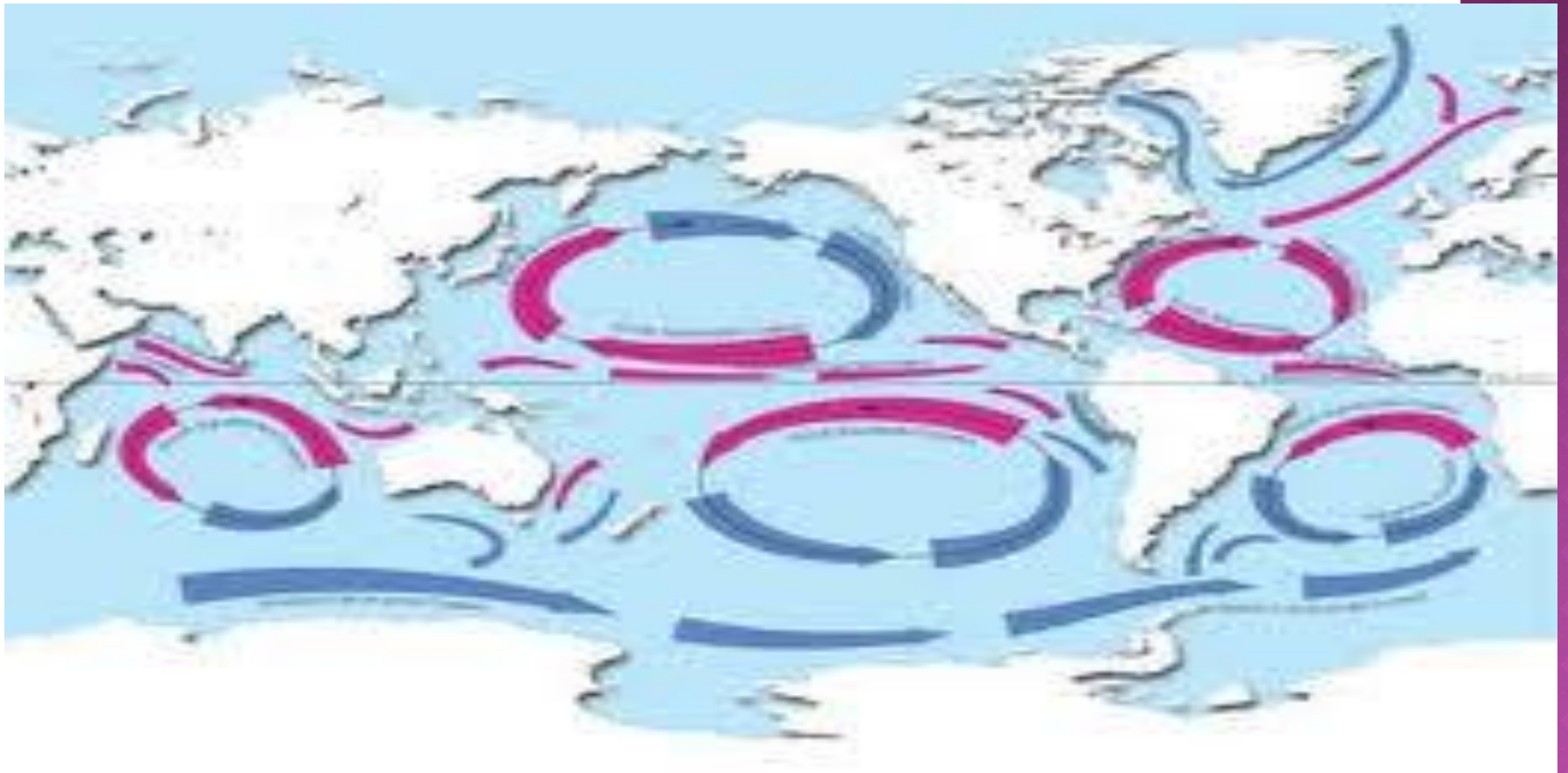


1. LATITUDE



2. OCEAN CURRENTS

- ◉ Ocean water travels in paths called currents



2. OCEAN CURRENTS

- Some currents are

Warm



- Some currents are

Cold

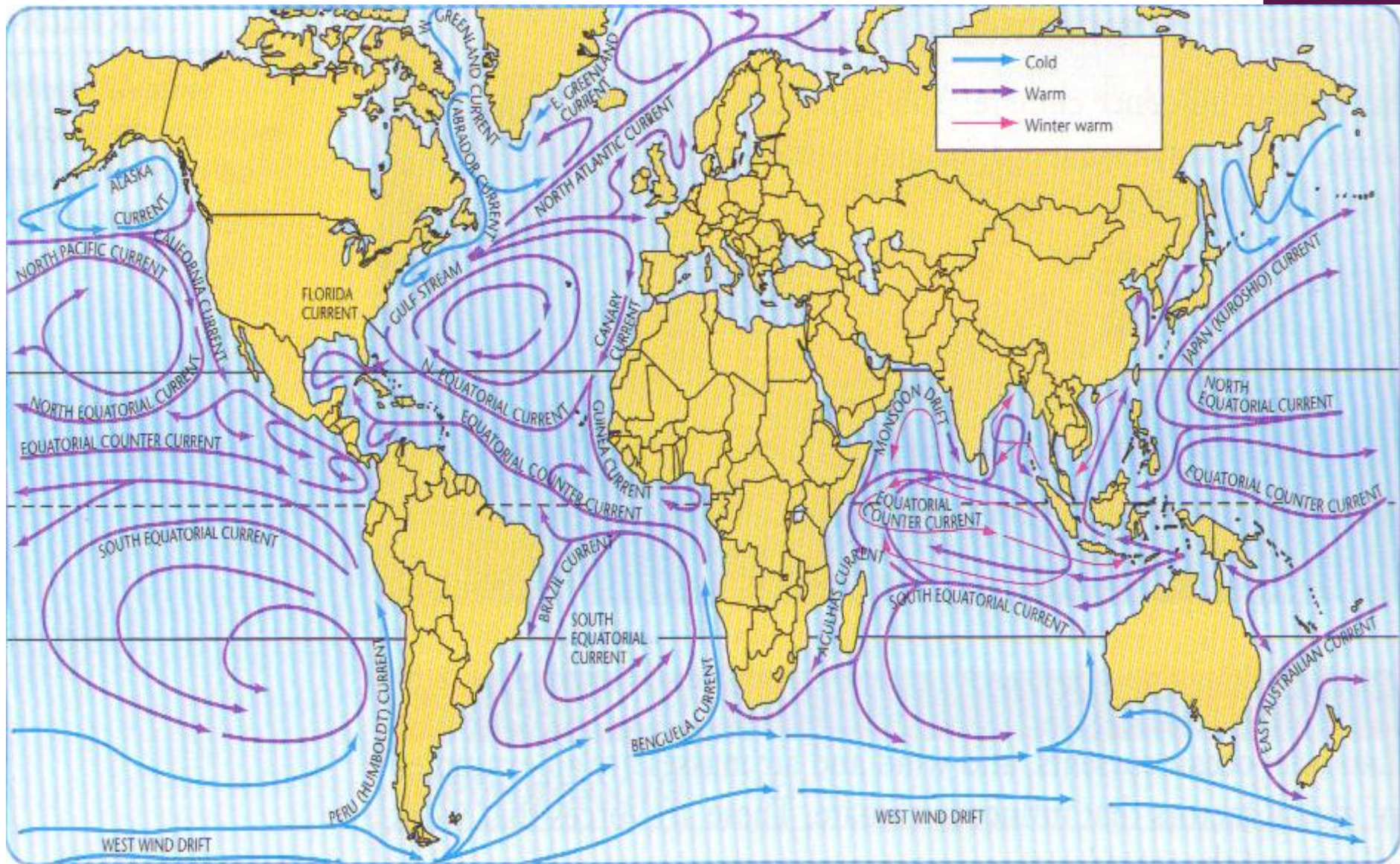


2. OCEAN CURRENTS

- ◉ Warm currents raise the temperature of the land nearby
- ◉ Cold currents drop the temperature of the land nearby

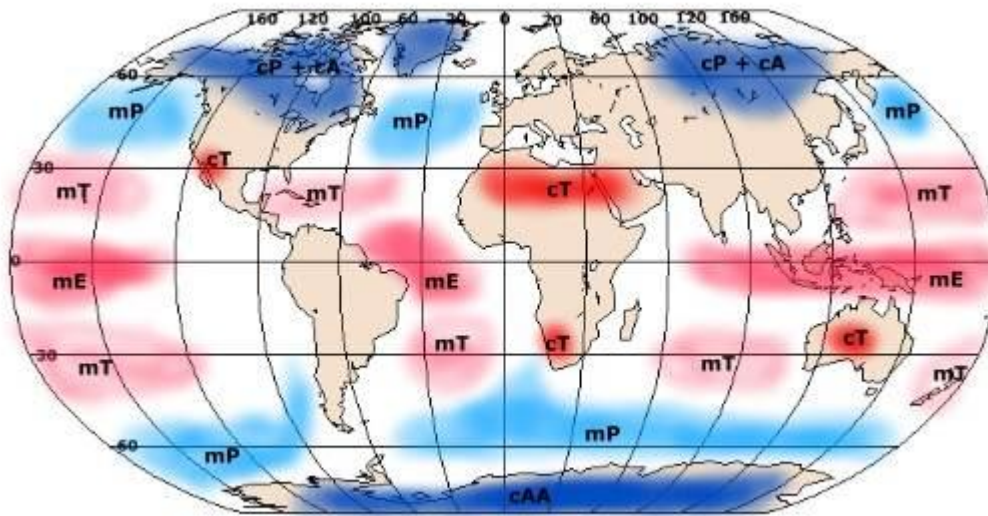
Air Mass	Conditions	Temperature
Continental Arctic	very cold, dry	-40°C
Maritime Polar	cool, moist	4°C
Continental Tropical	warm, dry	24°C
Maritime Tropical	warm, moist	24°C

2. OCEAN CURRENTS



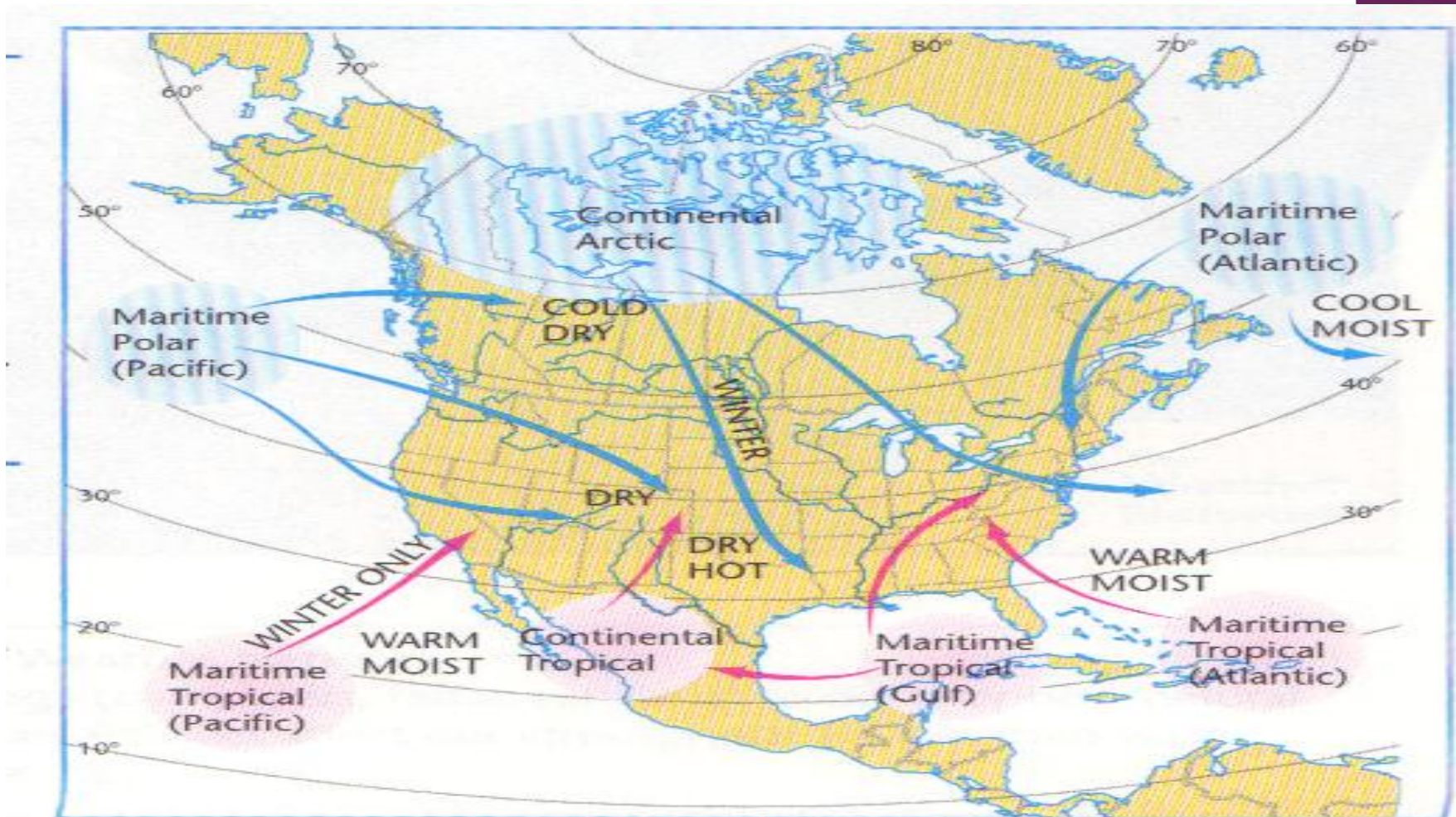
3. WIND AND AIR MASSES

- An air mass is a large volume of air



3. WIND AND AIR MASSES

- Air masses move over an area of land and bring weather conditions with them



4. ELEVATION AND ALTITUDE

- ◉ Elevation (height above the earth's surface)



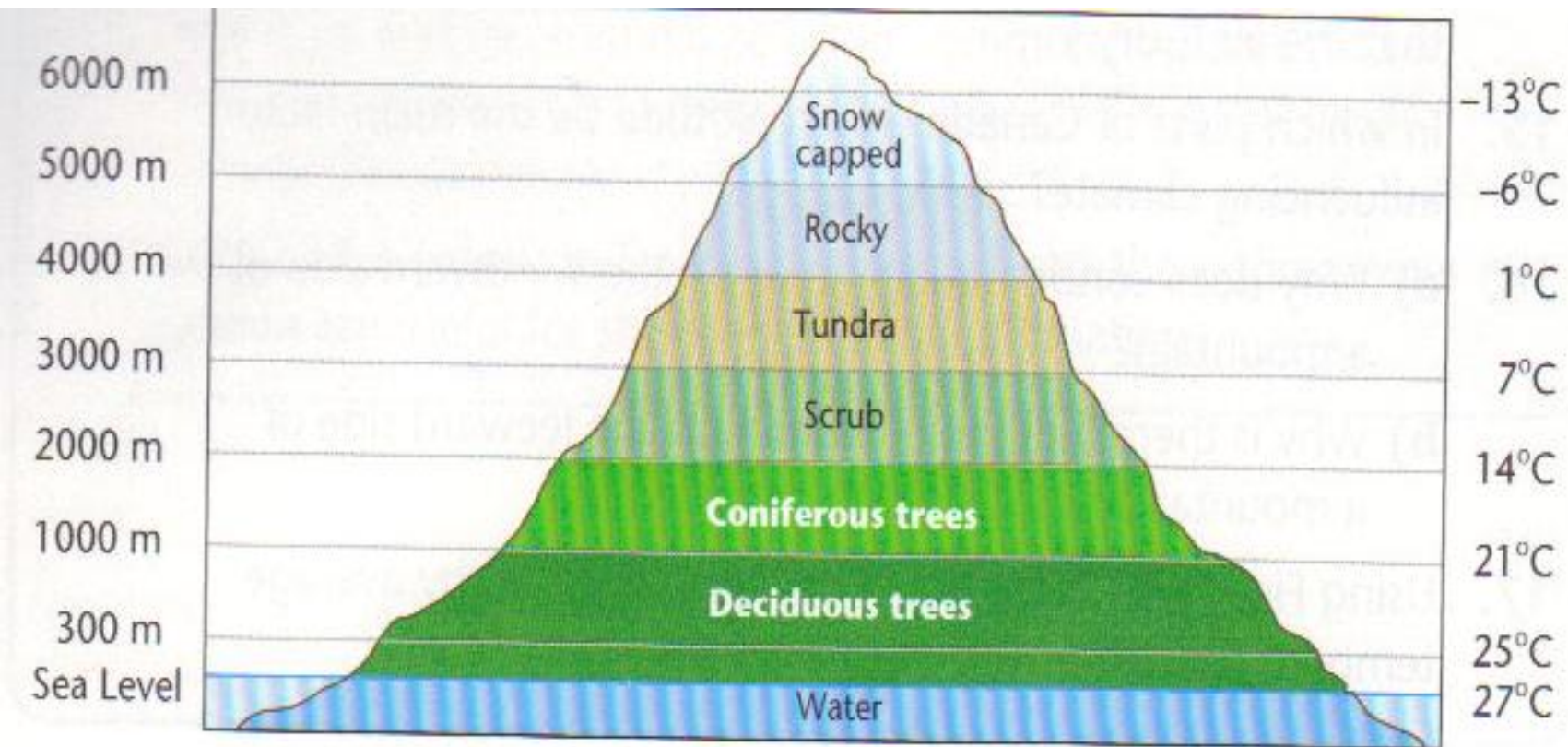
4. ELEVATION AND ALTITUDE

- ◉ Mountains influence climate because the higher up you go, the colder it is



4. ELEVATION AND ALTITUDE

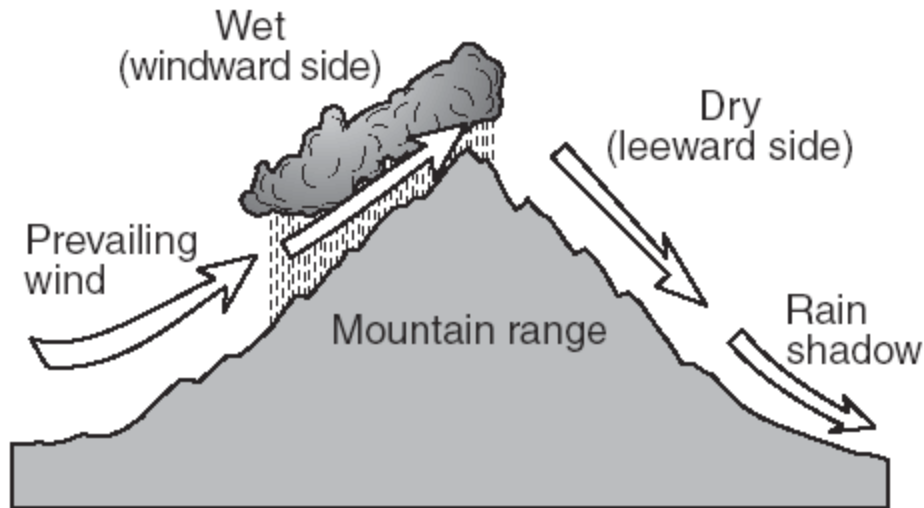
- ◉ The temperature decreases 1° for every 100m of altitude



5. Relief

How does the
Orographic Effect
affect climate?

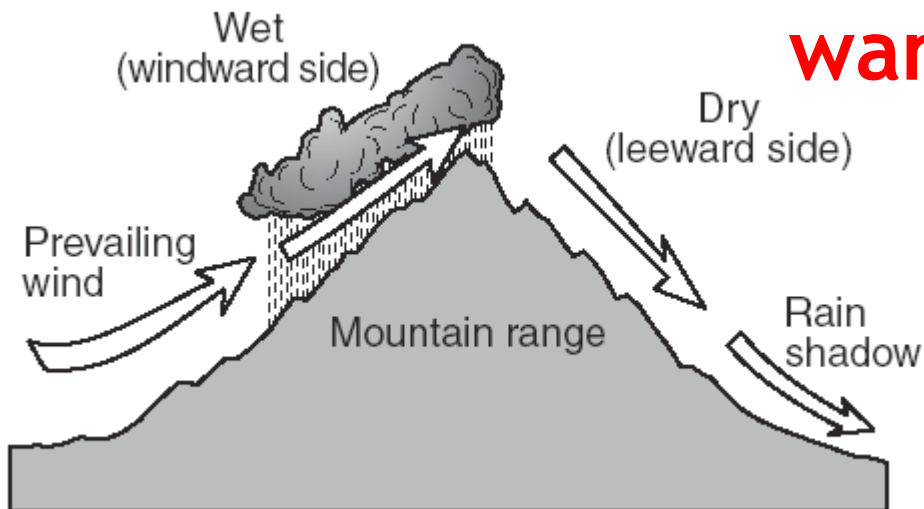
Windward Side: cool, moist
Leeward Side: warm, dry



How does the
Orographic Effect
affect climate?

cool, moist

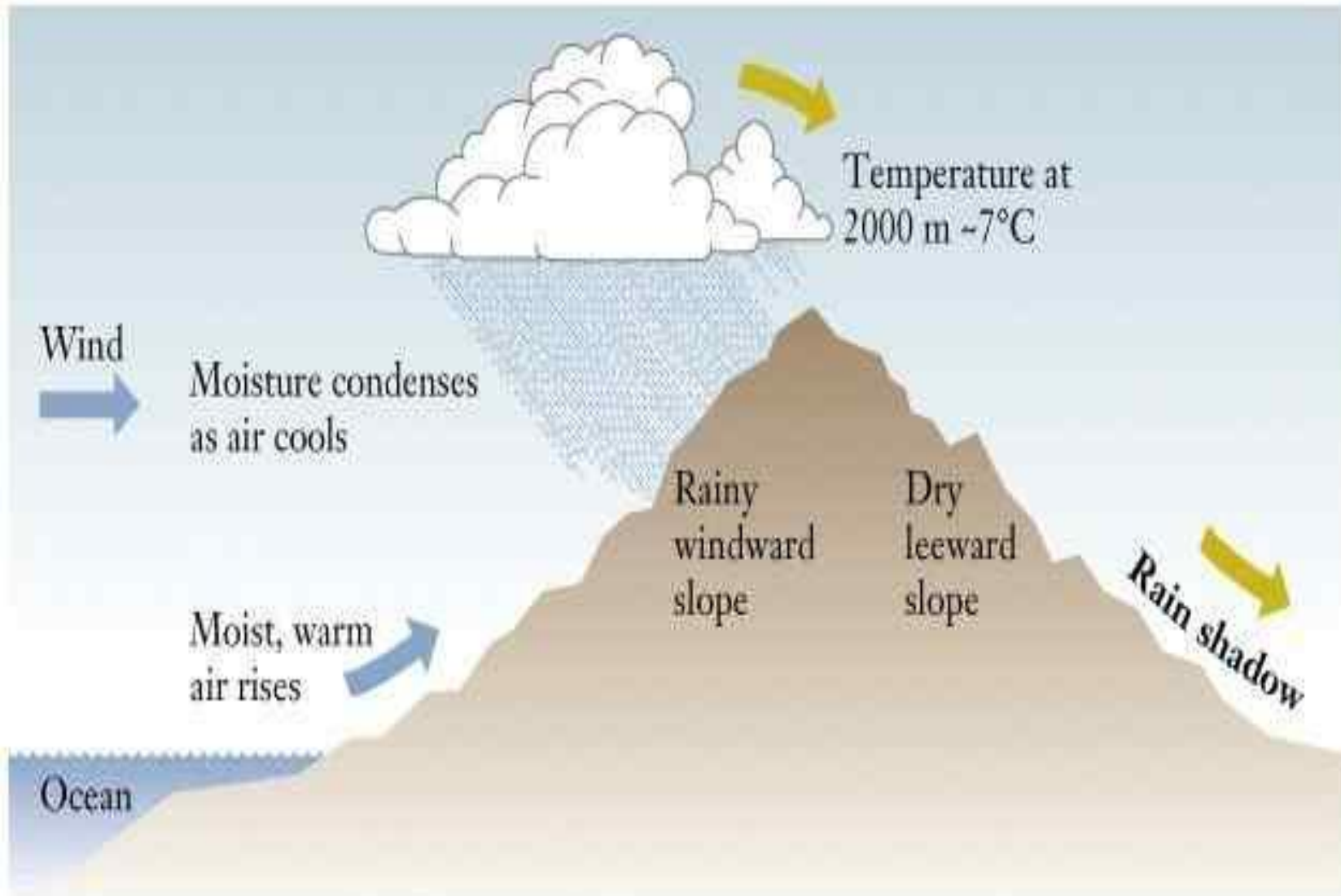
warm, dry



5. RELIEF

- Mountains receive more rainfall than low lying areas because the temperature on top of mountains is lower than the temperature at sea level
- Moist air condenses (becomes liquid) as it rises up the mountainside. This causes relief precipitation.

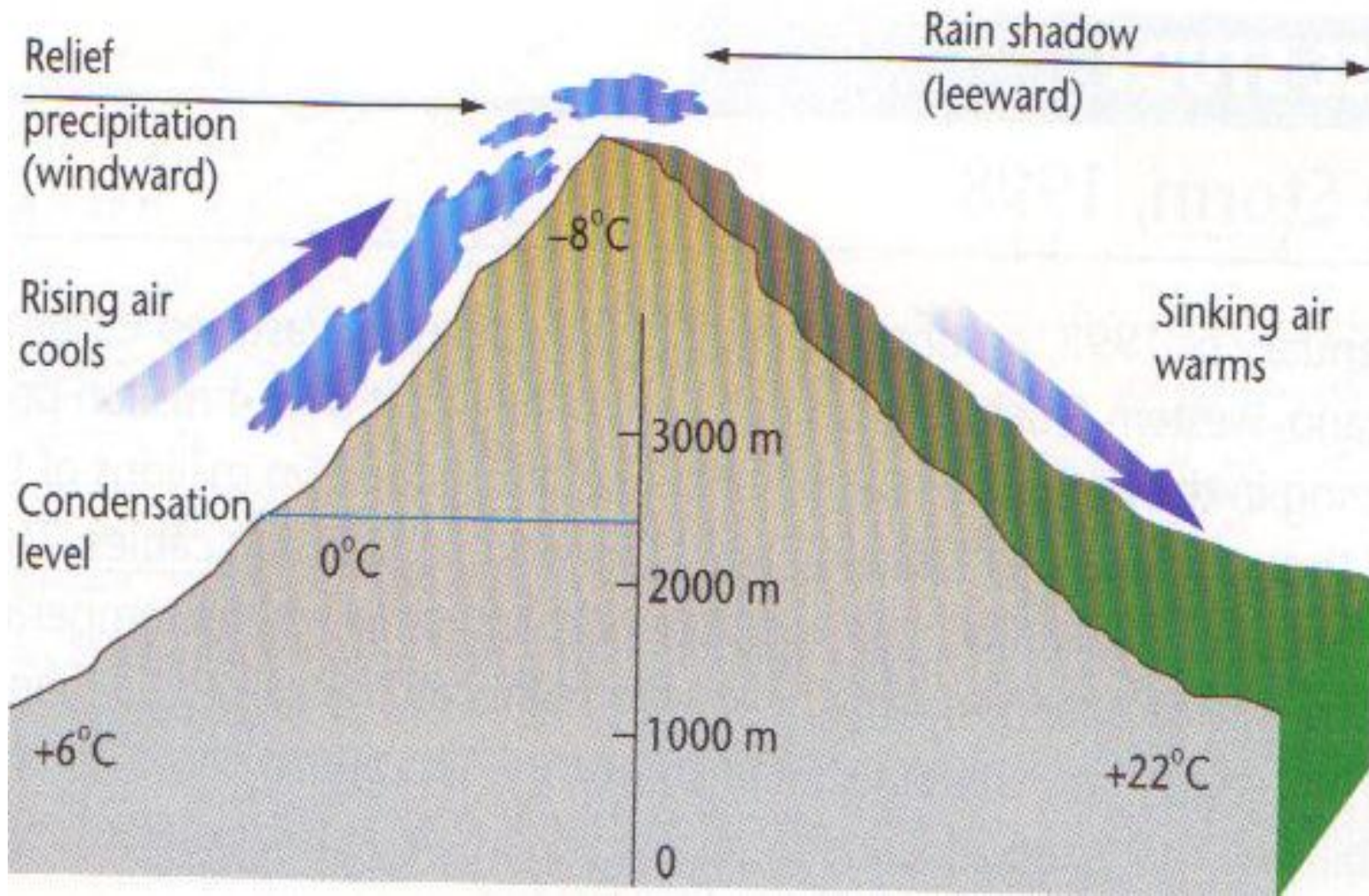
5. RELIEF



5. RELIEF

- ⦿ That is why you often see snow on the top of mountains all year round.
- ⦿ This happens because as altitude increases, air becomes thinner and is less able to absorb and retain heat.

5. RELIEF



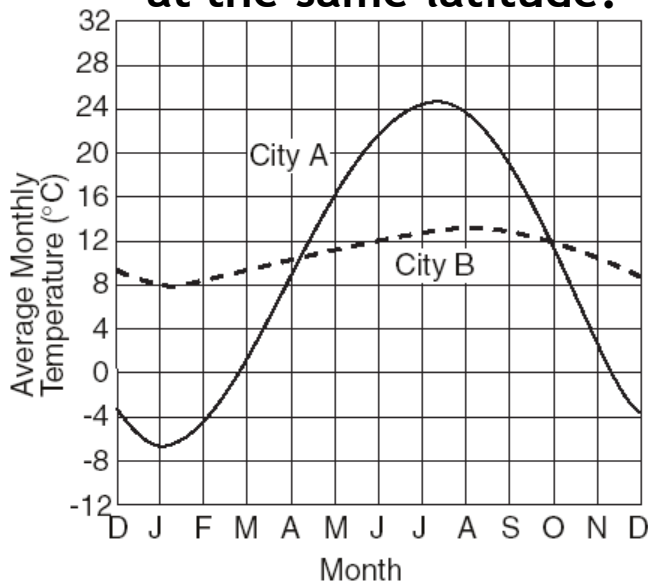
6. NEARNESS TO WATER

- ◉ Bodies of water are a source of moisture
- ◉ Winds carry the moisture over the land
- ◉ The colder deep water and the warmer surface mix to make land climate cooler in the summer and warmer in the winter

How does closeness to a large
body of water affect climate?

Water ~~moderates~~ the temperature.
~~Cooler~~ summers. ~~Warmer~~ winters.

Cities A & B are located
at the same latitude.



City B is closer to a large
body of water.

Its temperature line is
flatter (moderated).